WHAT IS CLAIMED IS:

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1. A device and illumination independent color reproduction system, comprising:

a color marking device including a color sensor;

a color controller including a memory and a controller, the memory including a feed-forward look-up table;

a first processing circuit that converts a reference color spectra into a reference parameter vector; and

a second processing circuit that converts a measured color spectra into a measured parameter vector.

2. The device and illumination independent color reproduction system of claim 1, including an image parameter mapping look-up table that translates the color image parameters to a device dependent color space.

3. The device and illumination independent color reproduction system of claim 1, including an image parameter mapping look-up table that translates the color image parameters to a device independent color space.

4. The device and illumination independent color reproduction system of claim 1, wherein the color sensor is mounted in an output paper path of the color marking device.

5. The device and illumination independent color reproduction system of claim 1, wherein the color sensor is mounted within an output tray of the color marking device.

6. The color control system of claim 1, further comprising at least one color image data source connectable to the first processing circuit.

7. The color control system of claim 6, wherein each at least one color image data source is one of a locally or remotely located computer, a personal digital assistant, a scanner, a digital camera, or a facsimile machine.

8. An apparatus for improving color reproduction, comprising:

a first processing circuit that converts a reference color spectra into a reference parameter vector;

a color controller that converts the reference parameter vector to a processed reference parameter vector;

a color marking device that prints an image based on the processed reference parameter vector;

a color sensor that measures reflectance spectra of the image printed based on the processed reference parameter vector;

a second processing circuit that converts the measured reflectance spectra into a measured parameter vector;

a color controller that compares the reference parameter vector with the measured parameter vector and produces, if the color controller determines that the reference parameter vector is not within an acceptable range of equivalents to the corresponding measured parameter vector, a compensated description of errors and the parameter vectors after processing the errors and the parameter vectors.

9. A method for improving color reproduction, comprising:

receiving a reference reflectance spectra;

converting the reference reflectance spectra to a corresponding reference parameter vector;

printing an image based on the converted reference parameter vector;

measuring reflectance spectra of the image printed based on the converted reference parameter vector;

converting the measured reflectance spectra to a corresponding measured parameter vector;

comparing the reference parameter vector to the measured parameter vector to determine an error vector; and

processing the error vector and the parameter vectors to produce spectrally matched color outputs.

10. The method of claim 9, wherein converting the reference reflectance spectra includes storing the reference reflectance spectra in a look-up-table.

11. The method of claim 9, wherein converting the reference reflectance spectra includes measuring a reflectance spectra of certain critical pixels of the image.

12. The method of claim 9, wherein converting the reference reflectance spectra includes converting the reference reflectance spectra through a linear transformation.

13. The method of claim 9, wherein converting the reference reflectance spectra includes converting the reference reflectance spectra through a non-linear transformation.

14. The method of claim 9, wherein converting the reference reflectance spectra includes converting the reference reflectance spectra using predetermined algorithms.

15. The method of claim 14, wherein converting the reference reflectance spectra using predetermined algorithms includes using only three parameters in the parameter vector per spectra from one of the standard CIE, XYZ or L* a* b* color spaces.

16. The method of claim 14, wherein converting the reference reflectance spectra using predetermined algorithms includes using more than three parameters in the parameter vector per spectra.

17. The method of claim 14, wherein converting the reference reflectance spectra using predetermined algorithms includes computing standard X, Y, Z, tristimulus values.

18. The method of claim 17, wherein converting the reference reflectance spectra using predetermined algorithms includes computing L* a* b* color values.

19. The method of claim 9, wherein converting the measured reflectance spectra includes storing the measured reflectance spectra in a look-up-table.

20. The method of claim 9, wherein converting the measured reflectance spectra includes measuring a reflectance spectra of certain critical pixels of the image.

21. The method of claim 9, wherein converting the measured reflectance spectra includes converting the measured reflectance spectra through a linear transformation.

22. The method of claim 9, wherein converting the measured reflectance spectra includes converting the measured reflectance spectra through a non-linear transformation.

23. The method of claim 9, wherein converting the measured reflectance spectra includes converting the measured reflectance spectra using predetermined algorithms.

24. The method of claim 23, wherein converting the measured reflectance spectra using predetermined algorithms includes using only three parameters in the

parameter vector per spectra from one of the standard CIE, XYZ or L* a* b* color spaces.

25. The method of claim 23, wherein converting the measured reflectance spectra using predetermined algorithms includes using more than three parameters in the parameter vector per spectra.

26. The method of claim 23, wherein converting the measured reflectance spectra using predetermined algorithms includes computing standard X, Y, Z, tristimulus values.

27. The method of claim 26, wherein converting the measured reflectance spectra includes computing L* a* b* color values.